AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A semiconductor substrate comprising:

a lightly doped substrate that contains impurities at a low concentration;

a heavily doped diffusion layer which ~~is formed over~~ entirely covers a top of the lightly doped substrate and is higher in impurity concentration than the lightly doped substrate; and

an epitaxial layer which ~~is formed over~~ entirely covers a top of the heavily doped diffusion layer and contains impurities at a lower concentration than the heavily doped diffusion layer.

2. (Original) A semiconductor substrate according to claim 1, wherein the impurities contained in the lightly doped substrate is phosphorous or boron.

3. (Original) A semiconductor substrate according to claim 2, wherein a resistance of the epitaxial layer is 10 Ωcm or less.

4. (Original) A semiconductor substrate according to claim 2, wherein the lightly doped substrate, the heavily doped diffusion layer, and the epitaxial layer are of the same conductivity type.

5. (Original) A semiconductor substrate according to claim 2, wherein the lightly doped substrate and the heavily doped diffusion layer are of a first conductivity type, and the epitaxial layer is of a second conductivity type.

6. (Withdrawn) A method of manufacturing a semiconductor substrate comprising:

forming, on a surface of a lightly doped substrate that contains impurities at a low concentration, a heavily doped diffusion layer which is higher in impurity concentration than the lightly doped substrate;

mirror finishing a surface of the heavily doped diffusion layer; and

forming an epitaxial layer on the surface mirror finished of the heavily doped diffusion layer, the epitaxial layer containing impurities at a lower concentration than the heavily doped diffusion layer.

7. (Withdrawn) A method of manufacturing a semiconductor substrate comprising:

mirror finishing a surface of a lightly doped substrate that contains impurities at a low concentration;

forming, on the surface mirror finished of the lightly doped substrate, a heavily doped diffusion layer which is higher in impurity concentration than the lightly doped substrate; and

forming an epitaxial layer on a surface of the heavily doped diffusion layer, the epitaxial layer containing impurities at a lower concentration than the heavily doped diffusion layer.

8. (Withdrawn) A method of manufacturing a semiconductor substrate comprising:

forming, on top and back of a lightly doped substrate that contains impurities at a low concentration, heavily doped diffusion layers which are higher in impurity concentration than the lightly doped substrate;

removing the heavily doped diffusion layer which is formed on one of the top and back of the lightly doped substrate;

mirror finishing a surface of the heavily doped diffusion layer which is formed on the other of the top and back of the lightly doped substrate; and

forming an epitaxial layer on the surface mirror finished of the heavily doped diffusion layer, the epitaxial layer containing impurities at a lower concentration than the heavily doped diffusion layer.

9. (Withdrawn) A method of manufacturing a semiconductor substrate comprising:

forming, on the top and the back of a lightly doped substrate that contains impurities at a low concentration, heavily doped diffusion layers which are higher in impurity concentration than the lightly doped substrate;

dividing the substrate into divided substrates by cutting it along a surface thereof at a center in a thickness direction;

planarizing a cut surface of each of the divided substrates;

mirror finishing a surface of the heavily doped diffusion layer which is formed on each of the divided substrates; and

forming an epitaxial layer on the surface mirror finished of the heavily doped diffusion layer on each of the divided substrates, the epitaxial layer containing impurities at a lower concentration than the heavily doped diffusion layers.

10. (Currently Amended) A semiconductor substrate comprising:

a heavily doped diffusion layer which ~~is formed over~~ entirely covers a top of a lightly doped substrate and is higher in impurity concentration than the lightly doped substrate, the lightly doped substrate being removed at a final stage of a process; and

an epitaxial layer which ~~is formed over~~ entirely covers a top of the heavily doped diffusion layer and contains impurities at a lower concentration than the heavily doped diffusion layer, wherein an impurity diffusion layer for forming a semiconductor device is formed in the epitaxial layer.

11. (Original) A semiconductor substrate according to claim 10, wherein a resistance of the epitaxial layer is 10 Ωcm or less.

12. (Original) A semiconductor substrate according to claim 10, wherein the lightly doped substrate, the heavily doped diffusion layer, and the epitaxial layer are of the same conductivity type.

13. (Original) A semiconductor substrate according to claim 10, wherein the lightly doped substrate and the heavily doped diffusion layer are of a first conductivity type, and the epitaxial layer is of a second conductivity type.

14. (Withdrawn) A method of manufacturing a semiconductor substrate according to claim 6, wherein the method further comprises forming in the epitaxial layer an impurity diffusion layer for forming a semiconductor device, and removing the lightly doped substrate at a final stage of a process of forming the semiconductor substrate.

15. (Withdrawn) A method of manufacturing a semiconductor substrate according to claim 7, wherein the method further comprises forming in the epitaxial layer an impurity

diffusion layer for forming a semiconductor device, and removing the lightly doped substrate at a final stage of a process of forming the semiconductor substrate.

16. (Withdrawn) A method of manufacturing a semiconductor substrate according to claim 8, wherein the method further comprises forming in the epitaxial layer an impurity diffusion layer for forming a semiconductor device, and removing the lightly doped substrate at a final stage of a process of forming the semiconductor substrate.

17. (Withdrawn) A method of manufacturing a semiconductor substrate according to claim 9, wherein the method further comprises forming in the epitaxial layer an impurity diffusion layer for forming a semiconductor device, and removing the lightly doped substrate at a final stage of a process of forming the semiconductor substrate.

SUPPORT FOR THE AMENDMENTS

Claims 1 and 10 have been amended.

The amendment of Claims 1 and 10 is supported by the figures of the present application. In the figures showing cross sectional views of the semiconductor substrates of the embodiments according to the present invention, a heavily doped diffusion layer entirely covers a top of the lightly doped substrate, and an epitaxial layer entirely covers a top of the heavily doped diffusion layer. For example, in Figure 10 a heavily doped diffusion layer 9 entirely covers a top of the lightly doped substrate 5, and an epitaxial layer 10 entirely covers a top of the heavily doped diffusion layer 9. No region or part is formed in the structure of the semiconductor substrate. From this specific structure, the resistivity of the epitaxial layer is uniform over the wafer.

No new matter has been entered by the present amendment.